Small Business Innovation Research/Small Business Tech Transfer

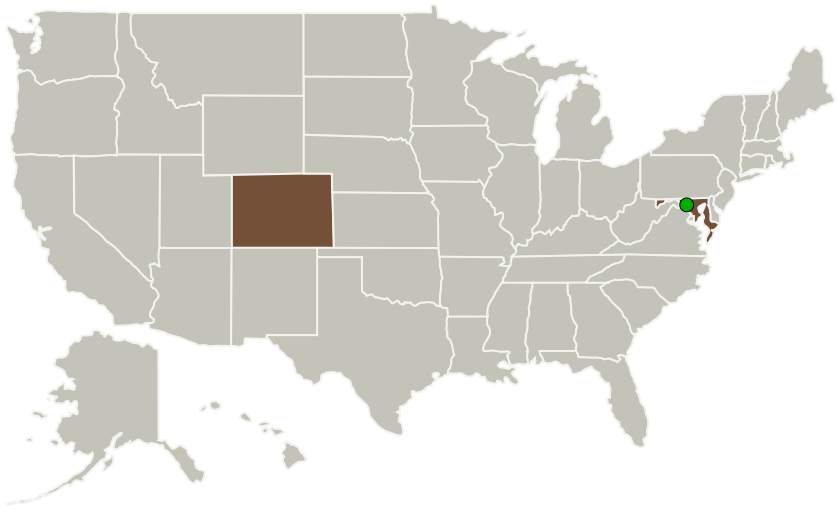
Hyperspectral Image Projector with Polarization Capability, Phase II

Completed Technology Project (2011 - 2013)

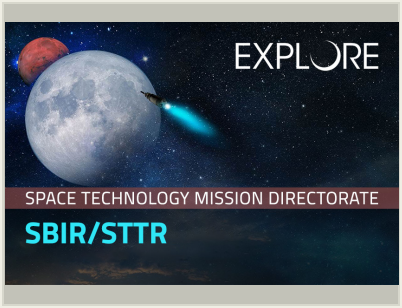
Project Introduction

The goal of this proposal is improve testing and calibration of imaging sensors used on remote sensing platforms through the development of calibrated scene projector, the Polarization Hyperspectral Image Projector (PHIP). Current calibration methods utilize spatially uniform optical radiation sources to ensure that sensors meet radiometric, polarization and spectral requirements, without the sensor being subjected to complex spatial /spectral / polarization imagery more typical of an operational scenario. As a result, instrumentation is sent into orbit without proper characterization, neglecting the very real effects of stray light, optical cross-talk and earth-shine. The proposed instrument will be capable of projecting realistic scenes to sensors under test, with accurate and high-resolution spectral/spatial /polarization tunability at each pixel.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Boulder Nonlinear Systems, Inc.	Lead Organization	Industry	Lafayette, Colorado
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



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Primary U.S. Work Locations	
Colorado	Maryland

Project Transitions

June 2011: Project Start

July 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138969)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Boulder Nonlinear Systems, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Mark Tanner

Co-Investigator:

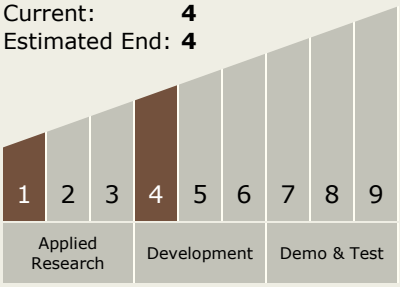
Mark Tanner

Hyperspectral Image Projector with Polarization Capability, Phase II

Completed Technology Project (2011 - 2013)

Technology Maturity (TRL)

Start: **1**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System